published a paper by Nabokich [1] in which he reaches the same conclusion as Duchartre. Nabokich used cut roots of about a dozen different species, and found in all but one (doubtful) case a slight loss of weight in the saturated atmosphere of a thermostat.

(To be continued.)

UNUSUAL VARIATIONS OF TWO COMMON AGARICS.

H. WEBSTER.

To say that *Armillaria mellea* is variable in its appearance is to fall far short of adequately expressing the truth in regard to this common agaric. Like *Laccaria laccata*, it puts on such an extremely unfamiliar look at times that one almost loses faith in the fixity of specific limits. Although typical forms are rarely wanting in its fruiting season, others are always abundant which, in color, surface, size, proportions, and especially in the character of the veil, are more or less striking in the tendency which they show to efface more or less completely some normally essential characteristic. Perhaps the taste is as constant as anything about the plant, and it may often be relied on to resolve a doubt. On the veil and ring no dependence can be placed whatever. Typically strong and fibrous, and even forming a wide-spreading, persistent collar, the veil is sometimes almost or entirely wanting at maturity. In a form found in Cambridge in October, 1898, and shown to the writer, the veil was glutinous and transparent, except immediately about the stem. The fibrous nature of the outer portions could not be detected by the naked eye any more than in the veils of *Cortinarius collinitus* or of *Hygrophorus fuligineus*. The glutinous character of the veil extended to the surface of the pileus which was extremely viscid. The plants were collected after a rain.

From several stations near Boston came reports last autumn of a form of the common *Lepiota naucina*, to which the name of "Smooth Agaric" has been given, in which the pileus was covered with brown scales. In two cases specimens were submitted which showed this character very strikingly, the surface being almost as rough and on the whole darker than is the case in *Lepiota cristata* and similiar species. These forms were growing with others in every way typical. Such an

[1] Bot. Centrbl. LXXX., 1899, p. 333.

extreme variation, however, is not allowed for in the descriptions and, were a group of such forms found in an isolated station, they might easily prove puzzling. Among the specimens submitted were two buttons nearly white at first, which, after lying a few hours in the dry air of a room, turned browner, a part of the surface cracking into scales.

Such instances of variation occurring in common fungi show the necessity, so strongly emphasized by Fries, of keeping close and constant watch of plants in the field from year to year, and they further suggest the possibility that in the case of species of rare occurrence and solitary habit, such as, for instance, *Amanita strobiliformis* and its allies, it may be that forms have been kept separate which should really be closely associated.

LUXURIANT DEVELOPMENT OF SPIROGYRA CRASSA IN REFILLED PONDS.

G. E. Stone.

Spirogyra crassa, Kuetz., one of the largest species of the genus, has been under my observation, more or less, in an incidental manner, for some twelve years. A peculiar trait which I have repeatedly observed, and to which I wish to call attention, is its remarkable abundance under certain conditions. In every instance the unusual abundance of this species was connected with the drawing off the water from artificial ponds, the drying up of the bed, and the subsequent refilling. I know of four instances where ponds have become dry, and in every case there has been a luxuriant growth the following season of this species, not common before in these ponds.

In two cases the locality was the pond in the Public Garden in Boston, the first occurring in 1886, the second a few years later; the third case was that of a small pond at Spencer, Mass., in 1889; the fourth, a pond in the Agricultural College grounds at Amherst, Mass., in 1893. In all these instances the plant was so common that it almost completely covered the surface of the water, at Amherst it became a nuisance, and cartloads of the floating filaments were gathered and carried away. Similar results, to a less noticeable extent, have been observed under similar conditions in ponds in Worcester.

The Spencer and Amherst ponds are contaminated with sewage